

CLAIMS

We claim:

- 1 1. A method comprising:
 - 2 performing a refinement coding pass to bit-planes of a code block to
 - 3 create refinement bits; and
 - 4 setting refinement bits to the more probable symbol (MPS).
- 1 2. The method defined in Claim 1 wherein only a portion of the
 - 2 refinement bits in a codeblock are set to the MPS.
- 1 3. The method defined in Claim 1 wherein setting refinement bits
 - 2 to the MPS is performed to implement non-uniform quantization step sizes.
- 1 4. An apparatus comprising:
 - 2 means for performing a refinement coding pass to bit-planes of a code
 - 3 block to create refinement bits; and
 - 4 means for setting refinement bits to the more probable symbol (MPS).

1 5. The apparatus defined in Claim 4 wherein only a portion of the
2 refinement bits in a codeblock are set to the MPS.

1 6. The apparatus defined in Claim 4 wherein setting refinement
2 bits to the MPS is performed to implement non-uniform quantization step
3 sizes.

1 7. An article of manufacture comprising at least one recordable
2 media storing executable instructions thereon which, when executed by a
3 processing device, cause the processing device to:
4 perform a refinement coding pass to bit-planes of a code block to
5 create refinement bits; and
6 set refinement bits to the more probable symbol (MPS).

1 8. The article of manufacture defined in Claim 7 wherein only a
2 portion of the refinement bits in a codeblock are set to the MPS.

1 9. The article of manufacture defined in Claim 7 wherein setting
2 refinement bits to the MPS is performed to implement non-uniform
3 quantization step sizes.

1 10. A method comprising:
2 applying a forward wavelet transform to input data to generate a
3 plurality of coefficients;
4 quantizing each coefficient to one of a plurality of potential values
5 based on which of a plurality of associated ranges in which said each
6 coefficient resides, wherein at least one of the potential values is not at the
7 centroid of its associated range.

1 11. An apparatus comprising:
2 means for applying a forward wavelet transform to input data to
3 generate a plurality of coefficients;
4 means for quantizing each coefficient to one of a plurality of potential
5 values based on which of a plurality of associated ranges in which said each
6 coefficient resides, wherein at least one of the potential values is not at the
7 centroid of its associated range.

1 12. An article of manufacture having one or more recordable
2 medium storing instructions thereon which, when executed by the machine,
3 cause the machine to:
4 apply a forward wavelet transform to input data to generate a
5 plurality of coefficients;
6 quantize each coefficient to one of a plurality of potential values
7 based on which of a plurality of associated ranges in which said each
8 coefficient resides, wherein at least one of the potential values is not at the
9 centroid of its associated range.

1 13. A method comprising:
2 identifying two spatially adjacent coefficients that are within a
3 predetermined amount numerically and in separate quantization bins;
4 setting a quantized value of one of the two spatially adjacent
5 coefficients to that of the other of the two spatially adjacent coefficients.

1 14. The method defined in Claim 13 wherein the predetermined
2 amount comprises a quantization bin size.

1 15. An apparatus comprising:
2 means for identifying two spatially adjacent coefficients that are
3 within a predetermined amount numerically and in separate quantization
4 bins;
5 means for setting a quantized value of one of the two spatially
6 adjacent coefficients to that of the other of the two spatially adjacent
7 coefficients.

1 16. The method defined in Claim 15 wherein the predetermined
2 amount comprises a quantization bin size.

1 17. An article of manufacture having one or more recordable
2 medium storing instructions thereon which, when executed by the machine,
3 cause the machine to:
4 identifying two spatially adjacent coefficients that are within a
5 predetermined amount numerically and in separate quantization bins;
6 setting a quantized value of one of the two spatially adjacent
7 coefficients to that of the other of the two spatially adjacent coefficients.

1 18. The article of manufacture defined in Claim 17 wherein the
2 predetermined amount comprises a quantization bin size.

1 19. A method comprising:
2 applying a forward wavelet transform to input data to generate a
3 plurality of coefficients including DC coefficients; and
4 quantizing the DC coefficients more than other coefficients in the
5 plurality of coefficients if the input data includes text.

1 20. The method defined in Claim 19 further comprising applying a
2 quantization step size of 8, 16 or 32 for text only regions of the input data
3 and a quantization step size of 1, 2 or 4 to non-text regions of the input data.

1 21. An article of manufacture comprising one or more recordable
2 media having executable instructions stored thereon which, when executed
3 by a machine, cause the machine to:
4 apply a forward wavelet transform to input data to generate a
5 plurality of coefficients including DC coefficients; and

6 quantize the DC coefficients more than other coefficients in the
7 plurality of coefficients if the input data includes text.

1 22. The article of manufacture defined in Claim 21 further
2 comprising instructions which, when executed by the machine, cause the
3 machine to apply a quantization step size of 8, 16 or 32 for text only regions
4 of the input data and a quantization step size of 1, 2 or 4 to non-text regions
5 of the input data.

1 23. An apparatus comprising:
2 means for applying a forward wavelet transform to input data
3 to generate a plurality of coefficients including DC coefficients; and
4 means for quantizing the DC coefficients more than other coefficients
5 in the plurality of coefficients if the input data includes text.

1 24. The method defined in Claim 23 further comprising applying a
2 quantization step size of 8, 16 or 32 for text only regions of the input data
3 and a quantization step size of 1, 2 or 4 to non-text regions of the input data.